National Resources Inventory
2002 Annual NRI

Wetlands

April 2004

About the Data

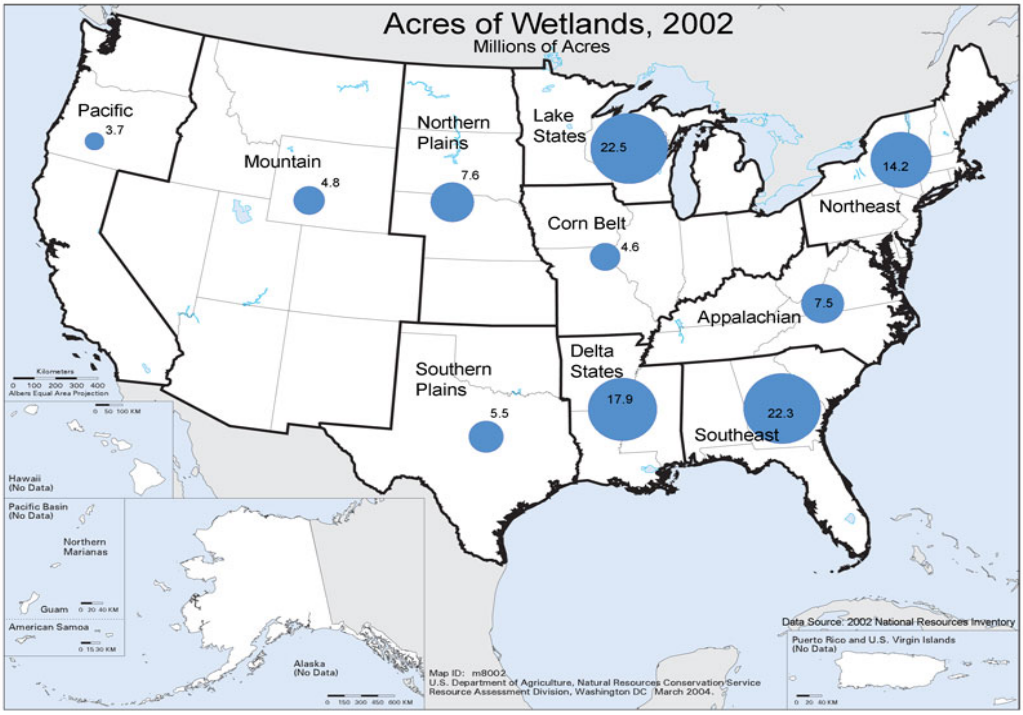
Estimates presented here are based upon the latest information from the National Resources Inventory (NRI). The NRI is a longitudinal sample survey based upon scientific statistical principles and procedures. It is conducted by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), in cooperation with Iowa State University's Center for Survey Statistics and Methodology.

This is the second Annual NRI for which results are being released. The first release in 2001 presented only national level results for a limited number of topics. During the period 1982 to 1997, NRI data were collected at 800,000 sample sites every 5 years.

The National Resources Inventory (NRI) is a statistical survey of natural resource conditions and trends on nonfederal land in the United States - nonfederal land includes privately owned lands, tribal and trust lands, and lands controlled by State and local governments. The NRI provides nationally consistent statistical data on Palustrine and Estuarine wetlands and other aquatic habitats for the period 1992 - 2002. The NRI provides information on types and classes of wetlands, regional distributions, and associated factors like soils and land use. Of particular interest are trends in wetland gains and losses due to agricultural activities.

Key Findings

- Wetlands cover 7 percent of the nonfederal land area of the 48 contiguous states, accounting for nearly 111 million acres. Most wetlands occur in the eastern half of the United States, particularly in the Lake States, Southeast, and Delta States Regions.



About the Data, cont.

Now the data are collected every year, but for slightly less than 25 percent of these same sample sites. The 2002 data are suitable for analyses at more refined scales than the 2001 Annual NRI, as reliability levels increase with the inclusion of additional data years. As data from subsequent inventory years are added to the database, results will become available to support regional, state, and sub-state analyses. Current estimates cover the contiguous 48 states. Future estimates will also cover Hawaii, Alaska , the Caribbean, and selected Pacific Basin islands.

The NRI is a multi-resource inventory. Data collection staff classify each sample point according to dozens of different attributes, including cover/use category, soil type, wetland or deepwater habitat, and forest cover. The wetland classification is assigned separately from the land cover/use category as wetlands can occur on nearly all land covers/uses.

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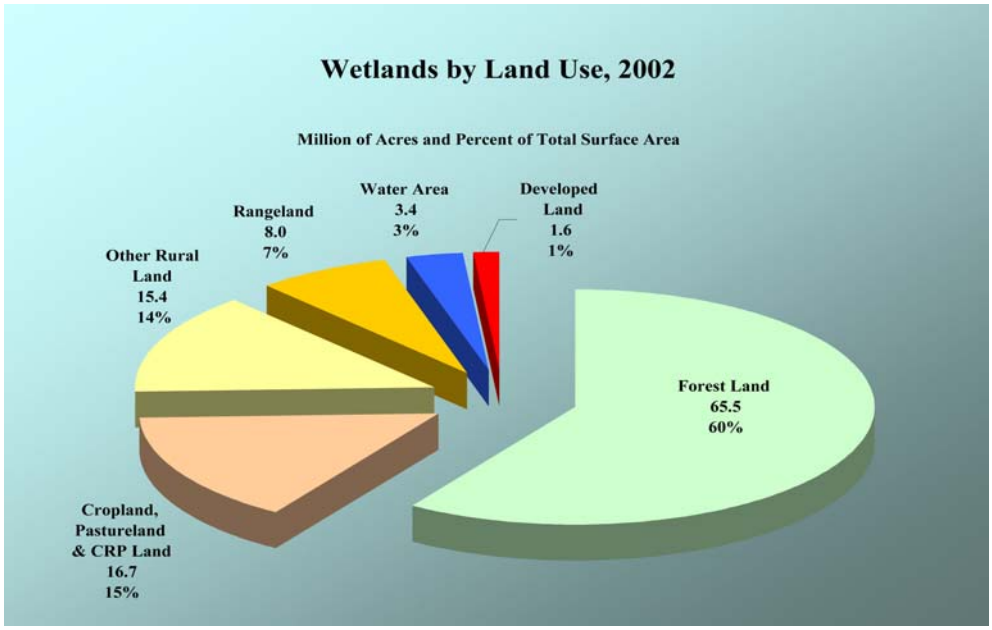
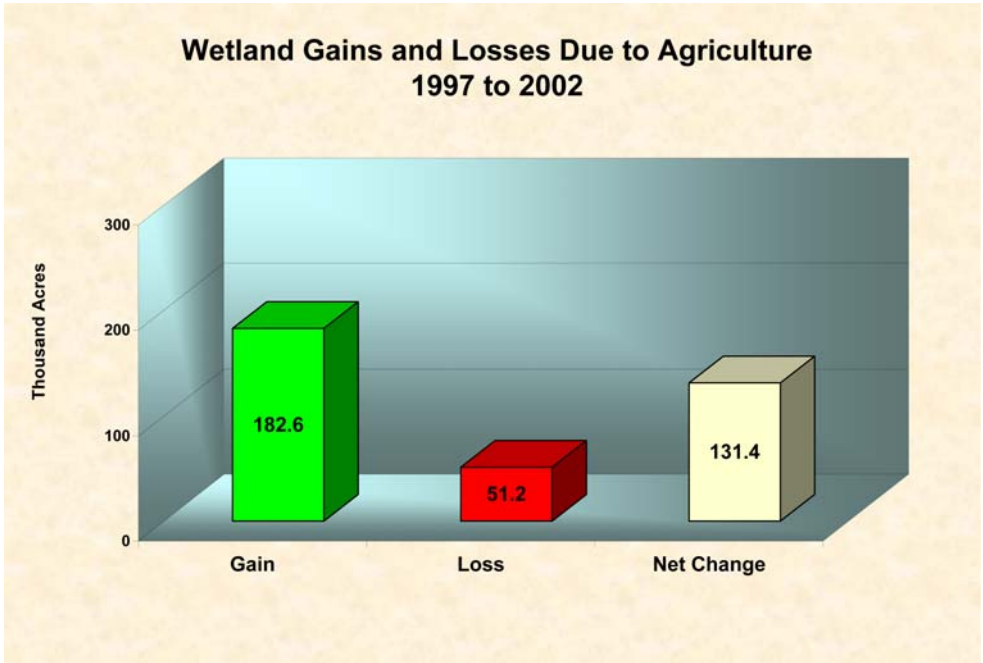
- Over 85 percent of wetlands are vegetated and freshwater, with 69 million acres being dominated by trees or shrubs and 26 million acres dominated by herbaceous vegetation.
- Most wetlands occur on forest land, while 15 percent of wetlands occur on lands associated with crop production and pasture.



- Between 1997 and 2002, there was a significant wetland gain due to agriculture - an average annual net gain of 26,000 acres. Average losses of 10,000 wetland acres per year were more than offset by corresponding average annual gains of 36,000 acres.



About the Data, cont.

Findings on land use come from the NRI data category "Land Cover/Use," which are mutually exclusive categories such as cropland, rangeland, forest land, other rural land, developed land, and water areas. The NRI uses this classification to account for each and every acre of nonfederal land within the Nation. Every parcel of land is described by one and only one of these categories.

The 2002 Annual NRI provides results on wetlands status and change for Palustrine and Estuarine wetlands, as defined by Cowardin, et. al. (1979). For additional information on NRI wetland data collection and interpretation, see Wetlands-Data Collection Methodology.

The NRI approach to conducting inventories facilitates examining trends in wetlands over time because -

- the same sample sites have been studied since 1992,

(*over*)

- Overall wetland conversions have declined from previous years. Between 1997 and 2002, annual losses averaged 56,000 acres, about half the annual average rate from the previous 5-year interval. Development accounted for two-thirds of the losses between 1997 and 2002.
- It is likely there was no longer an overall net loss of wetland acreage occurring within the contiguous United States between 1997 and 2002. The statistical uncertainties, however, make it inappropriate to interpret these results as an overall net gain.

Importance to the Nation

Healthy wetland landscapes are productive and dynamic, providing services such as nutrient capture and cycling, carbon sequestration, sediment retention, and surface and groundwater storage. Wetlands modulate water extremes, improve water quality, and provide valuable fish and wildlife habitat. Lands adjacent to wetlands have an important influence on the factors that affect overall wetland function and condition.

Wetland loss due to agriculture has declined steadily since the 1950s. The U.S. Fish and Wildlife Service has reported that losses due to agriculture averaged 400,000 acres annually between the mid-1950s and mid-1970s.

Sustaining, restoring, and revitalizing the health of the Nation’s wetlands resources can provide significant environmental benefits.

More Information

For more information about the NRI, visit
http://www.nrcs.usda.gov/technical/NRI/

See the 2002 Annual NRI Glossary for definitions of key terms.

To obtain State and local 1997 NRI data, contact your NRI coordinator. Links to State NRI websites and contact information can be found at:
http://www.nrcs.usda.gov/technical/NRI/1997/obtain_data.html

Send comments and questions to the NRI Help Desk.

About the Data, cont.

- the same wetlands data have been collected since 1992 [definitions and classifications have remained the same],
- quality assurance and statistical procedures are designed/developed to ensure that trend data are scientifically legitimate and unambiguous, and
- interpretations are facilitated by NRCS's extensive soils data and soils expertise.

Irrespective of the scale of analysis, margins of error must be considered. Margins of error (at the 95 percent confidence level) are presented for all NRI estimates.

Palustrine and Estuarine Wetlands on Nonfederal Lands and Water Areas in 2002, by Farm Production Region, in Millions of Acres, with Margins of Error

Region	Acres
Lake States	22.5 ± 0.7
Southeast	22.3 ± 0.5
Delta States	17.9 ± 0.4
Northeast	14.2 ± 0.5
Northern Plains	7.6 ± 0.3
Appalachian	7.5 ± 0.2
Southern Plains	5.5 ± 0.3
Mountain	4.8 ± 0.4
Corn Belt	4.6 ± 0.2
Pacific	3.7 ± 0.3
Total	110.6 ± 1.4

Wetlands and Deepwater Habitats on Nonfederal Lands and Water Areas in 2002, in Millions of Acres, with Margins of Error

Wetlands	Acres
Palustrine	104.8 ± 1.4
Estuarine	5.8 ± 0.4
Total	110.6 ± 1.4

Other Aquatic Habitats	
Lacustrine	24.8 ± 0.2
Riverine	10.4 ± 0.2
Marine	5.4 ± 0.1
Estuarine Deepwater	7.6 ± 0.4
Total	48.2 ± 0.4

Uplands	
Total	1,376.9 ± 1.4

Palustrine and Estuarine Wetlands on Nonfederal Lands and Water Areas in 2002, in Millions of Acres, with Margins of Error

Wetlands	Acres
Estuarine Wetlands	5.8 ± 0.4
Palustrine Forested	62.2 ± 1.3
Palustrine Scrub-shrub	6.4 ± 0.5
Palustrine Emergent	26.0 ± 0.8
Palustrine Non-vegetated	10.2 ± 0.6
Total Palustrine Wetlands	104.8 ± 1.4
Total Palustrine and Estuarine Wetlands	110.6 ± 1.4

Palustrine and Estuarine Wetlands on Nonfederal Lands and Water Areas in 2002, in Millions of Acres, with Margins of Error

Land Cover/Use	Acres
Forest Land	65.5 ± 1.3
Cropland, Pastureland, and CRP Land	16.7 ± 0.7
Other Rural Land	15.4 ± 0.7
Rangeland	8.0 ± 0.5
Water Area	3.4 ± 0.1
Developed Land	1.6 ± 0.1
Total	110.6 ± 1.4

Wetlands Gains and Losses, 1997 - 2002
in Thousands of Acres, with Margins of Error

	Gross Loss	Gross Gain	Net Change
Due to Agriculture	51.2 ± 32	182.6 ± 59	131.4 ± 70
Due to Development	188.8 ± 69	168.2 ± 56	-62.2 ± 96
Due to Other Factors	41.6 ± 10		
Total	281.6 ± 79	350.8 ± 78	69.2 ± 125